II

# [STAFF WORKING DRAFT]

MAY 12, 2006

109TH CONGRESS
2ND SESSION

# S. ——

To improve American innovation and competitiveness in the global economy.

---

IN THE SENATE OF THE UNITED STATES

MAY ——, 2006

Mr. ENSIGN (for himself, Mr. STEVENS, and Mrs. HUTCHISON) introduced the following bill; which was read twice and referred to the Committee on ————————

---

# A BILL

To improve American innovation and competitiveness in the global economy.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,*

**SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

(a) SHORT TITLE.—This Act may be cited as the ''American Innovation and Competitiveness Act of 2006''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

# TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY; GOVERNMENT-WIDE SCIENCE

**SEC. 101. NATIONAL SCIENCE AND TECHNOLOGY SUMMIT.**

(a) IN GENERAL.—Within 180 days after the date of enactment of this act, the President shall convene a National Science and Technology Summit. The Summit shall include representatives of industry, small business, academia, State government, and Federal research and development agencies. The summit shall examine the health and direction of the United States' science and technology enterprise.

(b) REPORT.—Within 90 days after the end of the Summit, the President shall issue a report on the results of the Summit. The report shall identify key research and technology challenges and recommendations for areas of investment for Federal research and technology programs over the next 5 years beginning after the report is issued.

(c) ANNUAL EVALUATION.—Beginning with the first year ending after the date of enactment of this Act, the Director of the Office of Science and Technology Policy shall publish an annual report containing recommendations for areas of investment for Federal research and technology programs, together with a justification for each area identified in the report. For the first 5 years after

the Summit, the report shall take into account recommendations of the Summit.

**SEC. 102. STUDY ON BARRIERS TO INNOVATION.**

(a) IN GENERAL.—The National Academy of Sciences shall conduct and complete a study to identify, and to review methods to mitigate, new forms of risk for businesses beyond conventional operational and financial risk that affect the ability to innovate, including studying and reviewing—

(1) incentive and compensation structures that could effectively encourage long-term value creation and innovation;

(2) methods of voluntary and supplemental disclosure by industry of intellectual capital, innovation performance, and indicators of future valuation;

(3) means by which government could work with industry to enhance the legal and regulatory framework to encourage the disclosures described in paragraph (2);

(4) practices that may be significant deterrents to United States businesses engaging in innovation risk-taking compared to foreign competitors, including tort litigation, the nature and extent of any resulting defensive management practices, and rec-

ommendations on practices to restore innovation risk-taking and to overcome defensive practices;

(5) means by which industry, trade associations, and universities could collaborate to support research on management practices and methodologies for assessing the value and risks of longer term innovation strategies; and

(6) means to encourage new, open, and collaborative dialogue between industry associations, regulatory authorities, management, shareholders, and other concerned interests to encourage appropriate approaches to innovation risk-taking.

(b) REPORT REQUIRED.—The National Academy of Sciences shall, not later than 1 year after the date of enactment of this Act and every 4 years thereafter, submit to Congress a report on the study conducted under subsection (a).

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Academy of Sciences $1,000,000 for fiscal year 2007 for the purpose of carrying out the study required under this section.

**SEC. 103. NATIONAL INNOVATION MEDAL.**

Section 16 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711) is amended—

(1) by striking the section heading and inserting ''**SEC. 16. NATIONAL TECHNOLOGY MEDAL; NATIONAL INNOVATION MEDAL.**'';

(2) by striking ''is'' in subsection (a) and inserting ''are'';

(3) by striking ''Medal,'' in subsection (a) and inserting ''Medal and a National Innovation Medal'';

(4) by striking ''medal,'' in subsection (b) and inserting ''medals,'';

(5) by striking ''States.'' in subsection (b) and inserting ''States or by reason of their unique scientific and engineering innovations in the National interest at the time such innovation occurs.''; and

6) by striking ''presentation of the award'' in subsection (c) and inserting ''presentations of the awards''.

# TITLE II—INNOVATION PROMOTION

**SEC. 201. PRESIDENT'S COUNCIL ON INNOVATION AND COMPETITIVENESS.**

(a) IN GENERAL.—The President shall establish a President's Council on Innovation and Competitiveness.

(b) DUTIES.—The Council's duties shall include—

(1) monitoring implementation of public laws and initiatives for promoting innovation, including policies related to research funding, taxation, immigration, trade, and education that are proposed in this and other Acts;

(2) in consultation with the Director of the Office of Management and Budget, developing a process for using metrics to assess the impact of existing and proposed policies and rules that affect innovation capabilities in the United States;

(3) identifying opportunities and making recommendations for the heads of executive agencies to improve innovation, monitoring, and reporting on the implementation of such recommendations;

(4) developing metrics for measuring the progress of the Federal Government with respect to improving conditions for innovation, including through talent development, investment, and infrastructure improvements; and

(5) submitting an annual report to the President and Congress on such progress.

(c) MEMBERSHIP AND COORDINATION.—

(1) MEMBERSHIP.—The Council shall be composed of the Secretary or head of each of the following:

(A) The Department of Commerce.

(B) The Department of Defense.

(C) The Department of Education.

(D) The Department of Energy.

(E) The Department of Health and Human Services.

(F) The Department of Homeland Security.

(G) The Department of Labor.

(H) The Department of the Treasury.

(I) The National Aeronautics and Space Administration.

(J) The Securities and Exchange Commission.

(K) The National Science Foundation.

(L) The Office of the United States Trade Representative.

(M) The Office of Management and Budget.

(N) The Office of Science and Technology Policy.

(O) Any other department or agency designated by the President.

(2) CHAIRPERSON.—The Secretary of Commerce shall serve as chairperson of the Council.

(3) COORDINATION.—The chairperson of the Council shall ensure appropriate coordination between the Council and the National Economic Council, the National Security Council, and the National Science and Technology Council.

(d) DEVELOPMENT OF INNOVATION AGENDA.—

(1) IN GENERAL.—The Council shall develop a comprehensive agenda for strengthening the innovation and competitiveness capabilities of the Federal Government and State governments, academia, and the private sector in the United States.

(2) CONSULTATION.—The comprehensive agenda required by paragraph (1) shall be developed in consultation with appropriate representatives of the private sector, scientific organizations, and academic organizations.

(e) TECHNICAL AMENDMENT.—Section 101(b) of the High-Performance Computing Act of 1991 (15 U.S.C. 5511(b)) is amended by striking ''an'' in the first sentence and inserting ''a distinct''.

**SEC. 202. INNOVATION ACCELERATION GRANTS.**

(a) GRANT PROGRAM.—The President, through the head of each Federal research agency, shall establish a grant program, to be known as the ''Innovation Acceleration Grants Program'', to support and promote innovation

in the United States. Priority in the awarding of grants shall be given to projects that—

(1) meet fundamental technology challenges;

(2) involve multidisciplinary work and a high degree of novelty;

(3) have the potential for yielding results with far-ranging or wide-ranging implications but are considered too novel or span too diverse a range of disciplines to fare well in the traditional peer review process.

(b) AWARDING OF GRANTS THROUGH DEPARTMENTS AND AGENCIES.—

(1) FUNDING GOALS.—The President shall ensure that it is the goal of each Executive agency (as defined in section 105 of title 5, United States Code) that finances research in science, mathematics, engineering, and technology to allocate approximately 8 percent of the agency's total annual research and development budget to funding grants under the Innovation Acceleration Grants Program.

(2) ADMINISTRATION.—

(A) IN GENERAL.—Each head of an Executive agency awarding grants under paragraph (1) shall submit a plan for implementing the grant program within such Executive agency to

the Director of the Office of Science and Technology Policy and the Director of the Office of Management and Budget. The implementation plan shall be submitted not later than 90 days after the date of enactment of this Act. The implementation plan may incorporate existing initiatives of the Executive agencies that promote research in innovation as described in subsection (a).

(B) REQUIRED METRICS.—The head of each Executive agency submitting an implementation plan pursuant to this section shall include metrics upon which grant funding decisions will be made and metrics for assessing the success of the grants awarded.

(C) GRANT DURATION AND RENEWALS.—

(i) IN GENERAL.—Any grants issued by an Executive agency under this section shall be for a period not to exceed 3 years.

(ii) EVALUATION.—Not later than 90 days prior to the expiration of a grant issued under this section, the Executive agency that approved the grant shall complete an evaluation of the effectiveness of the grant based on the metrics established

pursuant to subparagraph (B). In its evaluation, the Executive agency shall consider the extent to which the program funded by the grant met the goals of quality improvement and job creation.

(iii) PUBLICATION OF REVIEW.—The Executive agency shall publish and make available to the public the review of each grant approved pursuant to this section.

(iv) FAILURE TO MEET METRICS.—Any grant that the Executive agency awarding the grant determines has failed to satisfy any of the metrics developed pursuant to subparagraph (B), shall not be eligible for a renewal.

(v) RENEWAL.—A grant issued under this section that satisfies all of the metrics developed pursuant to subparagraph (B), may be renewed once for a period not to exceed 3 years. Additional renewals may be considered only if the head of the Executive agency makes a specific finding that the program being funded involves a significant technology advance that requires a longer timeframe to complete critical re-

search, and the research satisfies all the metrics developed pursuant to subparagraph (B).

(c) DEFINITIONS.—

(1) FEDERAL RESEARCH AGENCY DEFINED.—In this section, the term ''Federal research agency'' means a major organizational component of a department or agency of the Federal Government, or other establishment of the Federal Government operating with appropriated funds, that has as its primary purpose the performance of scientific research.

(2) MAJOR ORGANIZATIONAL COMPONENT.—The term ''major organizational component'', with respect to a department, agency, or other establishment of the Federal Government, means a component of the department, agency, or other establishment that is administered by an individual whose rate of basic pay is not less than the rate of basic pay payable under level V of the Executive Schedule under section 5316 of title 5, United States Code.

**SEC. 203. REGIONAL ECONOMIC DEVELOPMENT.**

(a) DEVELOPMENT OF FUNDING STRATEGY.—

(1) IN GENERAL.—The Assistant Secretary for Economic Development of the Department of Commerce shall review Federal programs that support

local economic development and prepare and implement a strategy to focus greater funding on initiatives that improve the ability of communities to participate successfully in the modern economy through innovation. In preparing the strategy, priority should be given to projects that—

(A) emphasize private sector cooperation with State and local governments and nonprofit organizations focused on regional economic development as the means of achieving specific objectives related to the support and promotion of innovation; and

(B) are the most successful in meeting the metrics established under subsection (b).

(2) COORDINATION.—The Assistant Secretary shall coordinate the development and implementation of the strategy with the activities carried out by the Secretary of Commerce under subsection (d).

(b) EVALUATION OF PROGRAMS.—The Assistant Secretary for Economic Development of the Department of Commerce shall develop metrics to measure the success of Federal programs in supporting and promoting innovation at the local community level while minimizing bureaucracy and overhead expenses.

(c) PROMOTION OF ECONOMIC DEVELOPMENT OPPORTUNITIES.—The Assistant Secretary for Economic Development of the Department of Commerce should work with organizations focused on economic development to highlight opportunities for such organizations to serve local communities through grants focused on economic development and investment in companies pursuing innovation.

(d) REGIONAL INNOVATION HOT SPOTS.—

(1) PROMOTION OF REGIONAL INNOVATION HOT SPOTS.—The Secretary of Commerce shall coordinate activities focused on promoting innovation through the development of regional innovation hot spots.

(2) GUIDE TO DEVELOPING SUCCESSFUL REGIONAL INNOVATION HOT SPOTS.—

(A) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary of Commerce, in consultation with representatives of regional innovation hot spots, shall publish a report, to be titled the ''Guide to Developing Successful Regional Innovation Hot Spots'', that examines successful regional innovation hot spots and includes recommenda-

tions for establishing and fostering regional innovation hot spots.

(B) CONTENT.—The report required under subparagraph (A) shall—

(i) include information on the evaluation of human capital;

(ii) include information on the role of sponsoring institutions, such as universities, nonprofit organizations, and laboratories, in establishing and fostering regional innovation hot spots;

(iii) include information on the role of State and local government leaders, leaders in the research and business communities, and community organizations in establishing and fostering regional innovation hot spots;

(iv) discuss the importance of collaboration by public and private sector leaders;

(v) identify sources of funding for these activities within Federal, State, and local governments and the private sector; and

(vi) include recommendations for developing strategic plans to stimulate inno-

vation, including recommendations relating to knowledge transfer and commercialization, the support of regional entrepreneurship and increased innovation within existing regional firms, and the linking of primary institutions engaged in the innovation process.

(3) REGIONAL INNOVATION HOT SPOT METRICS.—

(A) DEVELOPMENT OF METRICS.—In conjunction with publishing the report required under paragraph (2), the Secretary of Commerce shall develop the following sets of metrics:

(i) Metrics to be considered for identifying potential regional innovation hot spots (in this subsection referred to as ''identifying metrics'').

(ii) Metrics to be considered for evaluating the impact and effectiveness of established regional innovation hot spots (in this subsection referred to as ''evaluation metrics'').

(B) USE OF METRICS.—The Secretary of Commerce shall use the identifying metrics to

conduct biannual assessments of potential regional clusters and shall use the evaluation metrics to assess the impact and effectiveness of established regional innovation hot spots in improving the regional economy and regional job market. The Secretary shall also assess the cost effectiveness of operating within each regional hot spot. The Secretary shall report the biannual assessments to Congress.

(e) REGIONAL INNOVATION HOT SPOTS.—In this section, the term ''regional innovation hot spots'' means regions that are defined by a high degree of innovation and the availability of talent, investment, and infrastructure necessary to create and sustain such innovation.

# TITLE III—NATIONAL SCIENCE FOUNDATION

**SEC. 301. AUTHORIZATION OF APPROPRIATIONS.**

(a) IN GENERAL.—There are authorized to be appropriated to the National Science Foundation—

(1) $6,440,000,000 for fiscal year 2007;

(2) $7,433,000,000 for fiscal year 2008;

(3) $8,577,000,000 for fiscal year 2009;

(4) $9,898,000,000 for fiscal year 2010; and

(5) $11,422,000,000 for fiscal year 2011.

(b) PLAN FOR INCREASED RESEARCH.—

(1) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the Director of the National Science Foundation shall submit a comprehensive, multiyear plan that describes how the funds authorized in subsection (a) would be used, if appropriated, to the Senate Committee on Commerce, Science, and Transportation, the Senate Committee on Health, Education, Labor, and Pensions and the House of Representatives Committee on Science.

(2) PLAN REQUIREMENTS.—The Director shall—

(A) develop the plan with a focus on strengthening the Nation's lead in physical science and technology, increasing overall workforce skills in physical science, technology, engineering, and mathematics at all levels, and strengthening innovation by expanding the focus of competitiveness and innovation policy at the regional and local level; and

(B) emphasize spending increased research funds appropriated pursuant to subsection (a) in areas of investment for Federal research and technology programs identified under section 101(c) of this Act.

**SEC. 302. INNOVATION-BASED EXPERIENTIAL LEARNING.**

(a) IN GENERAL.—The Director of the National Science Foundation shall establish a grant program under which grants are provided to local educational agencies to enable the local educational agencies to implement innovation-based experiential learning in a total of up to 500 secondary schools and up to 500 elementary or middle schools in the United States.

(b) APPLICATIONS.—A local educational agency desiring a grant under this section shall submit an application at such time, in such manner, and accompanied by such information as the Director of the National Science Foundation may require.

(c) EXPERIENTIAL LEARNING DEFINED.—In this section, the term ''experiential learning'' means a teaching model that—

(1) begins with a relevant, real-world problem;

(2) requires a student to research and plan a solution to the problem, and experiment with that solution; and

(3) follows the experiment with analysis, reflection, discussion, and a redesign of the solution.

**SEC. 303. GRADUATE FELLOWSHIPS AND GRADUATE TRAINEESHIPS.**

(a) GRADUATE RESEARCH FELLOWSHIP PROGRAM.—

(1) IN GENERAL.—During the 5-year period beginning on the date of the enactment of this Act, the Director of the National Science Foundation shall expand the Graduate Research Fellowship Program of the Foundation so that an additional 1,250 fellowships are awarded to United States citizens under the Program during that period.

(2) EXTENSION OF FELLOWSHIP PERIOD.—The Director is authorized to award fellowships under the Graduate Research Fellowship Program for a period of up to 5 years.

(3) AUTHORIZATION OF APPROPRIATIONS.—Within the amounts authorized to be appropriated by section 301, there are authorized to be appropriated $34,000,000 for each of the fiscal years 2007 through 2011 to provide an additional 250 fellowships under the Graduate Research Fellowship Program during each such fiscal year.

(b) INTEGRATIVE GRADUATE EDUCATION AND RESEARCH TRAINEESHIP PROGRAM.—

(1) IN GENERAL.—During the 5-year period beginning on the date of the enactment of this Act, the Director shall expand the Integrative Graduate Education and Research Traineeship program of the Foundation so that an additional 1,250 United

States citizens are awarded grants under the program during that period.

(2) AUTHORIZATION OF APPROPRIATIONS.—Within the amounts authorized to be appropriated by section 301, there are authorized to be appropriated $57,000,000 for each of the fiscal years 2007 through 2011 to provide grants to an additional 250 individuals under the Integrative Graduate Education and Research Traineeship program during each such fiscal year.

**SEC. 304. PROFESSIONAL SCIENCE MASTERS DEGREE PROGRAMS.**

(a) CLEARINGHOUSE.—

(1) DEVELOPMENT.—The Director of the National Science Foundation shall establish a clearinghouse, in collaboration with 4-year institutions of higher education, including applicable graduate schools and academic departments, industries, and Federal agencies that employ science-trained personnel, to share program elements used in successful professional science masters degree programs.

(2) AVAILABILITY.—The Director shall make the clearinghouse of program elements developed under paragraph (1) available to institutions of

higher education that are developing professional science masters degree programs.

(b) PILOT PROGRAMS.—

(1) PROGRAM AUTHORIZED.—The Director shall award grants for pilot programs to 4-year institutions of higher education to facilitate the institutions' creation or improvement of professional science master's degree programs.

(2) APPLICATION.—A 4-year institution of higher education desiring a grant under this section shall submit an application at such time, in such manner, and accompanied by such information as the Director may require. The application shall include—

(A) a description of the professional science masters degree program that the institution of higher education will implement;

(B) the amount of funding from non-Federal sources, including from private industries, that the institution of higher education shall use to support the professional masters degree program; and

(C) an assurance that the institution of higher education shall encourage students in the professional science master's degree pro-

gram to apply for all forms of Federal assistance available to such students, including applicable graduate fellowships and student financial assistance under title IV of the Higher Education Act of 1965 (20 U.S.C. 1070 et seq.).

(3) PREFERENCE FOR ALTERNATIVE FUNDING SOURCES.—The Director shall give preference in making awards to 4-year institutions of higher education seeking Federal funding to support pilot professional science master's degree programs, to those applicants that secure more than ⅔ of the funding for such professional science masters degree programs from sources other than the Federal Government.

(4) NUMBER OF GRANTS; TIME PERIOD OF GRANTS.—

(A) NUMBER OF GRANTS.—Subject to the availability of appropriated funds, the Director shall award grants under paragraph (1) to a maximum of 200 4-year institutions of higher education.

(B) TIME PERIOD OF GRANTS.—Grants awarded under this section shall be for one 3-year term. Grants may be renewed only once for a maximum of 2 additional years.

(5) EVALUATION AND REPORTS.—

(A) DEVELOPMENT OF PERFORMANCE BENCHMARKS.—Prior to the start of the grant program, the National Science Foundation, in collaboration with 4-year institutions of higher education, shall develop performance benchmarks to evaluate the pilot programs assisted by grants under this section.

(B) EVALUATION.—For each year of the grant period, the Director, in consultation with 4-year institutions of higher education, and Federal agencies that employ science-trained personnel, shall complete an evaluation of each pilot program assisted by grants under this section. Any pilot program that fails to satisfy the performance benchmarks developed under subparagraph (A) shall not be eligible for further funding.

(C) REPORT.—Not later than 180 days after the completion of an evaluation described in subparagraph (A), the Director, in consultation with industries and Federal agencies that employ science-trained personnel, shall submit a report to Congress that includes—

(i) the results of the evaluation described in subparagraph (A); and

(ii) recommendations for administrative and legislative action that could optimize the effectiveness of the pilot programs, as the Director determines to be appropriate.

(c) INSTITUTION OF HIGHER EDUCATION DEFINED.—In this section, the term ''institution of higher education'' has the meaning given that term in section 101(a) of the Higher Education Act of 1965.

(d) AUTHORIZATION OF APPROPRIATIONS.—Within the amounts authorized by be appropriate by section 301, there are authorized to be appropriated to carry out this section $20,000,000 for fiscal year 2007 and such sums as may be necessary for each succeeding fiscal year.

**SEC. 305. INCREASED SUPPORT FOR SCIENCE EDUCATION THROUGH THE NATIONAL SCIENCE FOUNDATION.**

Within the amounts authorized to be appropriated by section 301, there are authorized to be appropriated to carry out the physical science, mathematics, engineering, and technology talent expansion program under section 8(7) of the National Science Foundation Authorization Act of 2002 (Public Law 107–368, 116 Stat. 3042)—

(1) $35,000,000 for fiscal year 2007;

(2) $50,000,000 for fiscal year 2008;

(3) $60,000,000 for fiscal year 2009; and

(4) $70,000,000 for fiscal year 2010.

**SEC. 306. STUDY OF SERVICE SCIENCE.**

(a) SENSE OF CONGRESS.—It is the sense of Congress that, in order to strengthen the competitiveness of United States enterprises and institutions and to prepare the people of the United States for high-wage, high-skill employment, the Federal Government should better understand and respond strategically to the emerging vocation and learning discipline known as service science.

(b) STUDY.—Not later than 270 days after the date of the enactment of this Act, the Director of the National Science Foundation, through the National Academy of Sciences, shall conduct a study and report to Congress regarding how the Federal Government should support, through research, education, and training, the new discipline of service science.

(c) OUTSIDE RESOURCES.—In conducting the study under subsection (b), the Director of the National Science Foundation shall consult with leaders from 2- and 4-year institutions of higher education, as defined in section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001), leaders from corporations, and other relevant parties.

(d) SERVICE SCIENCE DEFINED.—In this section:

(1) IN GENERAL.—The term ''service science'' means curricula, research programs, and training regimens, including service sciences, management, and engineering programs, to teach individuals to apply technology, organizational process management, and industry-specific knowledge to solve complex problems.

(2) SERVICE SCIENCES, MANAGEMENT, AND ENGINEERING PROGRAMS.—The term ''service sciences, management, and engineering programs'' means the discipline known as service sciences, management, and engineering that—

(A) applies scientific, engineering, and management disciplines to tasks that one organization performs beneficially for others, generally as part of the services sector of the economy; and

(B) integrates computer science, operations research, industrial engineering, business strategy, management sciences, and social and legal sciences, in order to encourage innovation in how organizations create value for customers and shareholders that could not be achieved through such disciplines working in isolation.

**SEC. 307. MEETING CRITICAL NATIONAL SCIENCE NEEDS.**

(a) IN GENERAL.—In addition to assessing the degree to which research award and grant proposals submitted to the Foundation, and research activities initiated by the Foundation, sustain and strengthen the nation's traditional commitment to long-term basic research that have the potential to be transformational to maintain the flow of new ideas that fuel the economy, provide security, and enhance the quality of life, to developing and sustaining a world class scientific workforce. and to fostering the scientific literacy of its citizens, the Director of the National Science Foundation shall include consideration of the degree to which such awards and such research activities may assist in meeting critical national needs in the physical sciences, technology, engineering, and mathematics.

(b) PRIORITY TREATMENT.—Proposed research activities, and grants funded under the Foundation's Research and Related Activities Account, which can be expected to make contributions in physical and natural sciences, technology, engineering, and mathematics, and other research that underpins these areas, shall be given priority in the selection of awards and in the allocation of Foundation resources.

(c) APPLICATION OF PRIORITY TREATMENT TO OTHER PROGRAMS.—This requirement shall be applied to

other fellowship, grant or award programs authorized in this title.

**SEC. 308. EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH.**

Within the amounts authorized to be appropriated by section 301, there are authorized to be appropriated to the National Science Foundation for the Experimental Program to Stimulate Competitive Research authorized under section 113 of the National Science Foundation Authorization Act of 1988 (42 U.S.C. 1862g)—

(1) $125,000,000 for fiscal year 2007; and

(2) for each of fiscal years 2008 through 2011, an amount equal to $125,000,000 increased for each such year by an amount equal to the percentage increase of the National Science Foundation's budget request above the total amount appropriated to the Foundation for fiscal year 2007.

# TITLE IV—NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

**SEC. 401. NASA'S CONTRIBUTION TO INNOVATION.**

(a) SENSE OF THE CONGRESS.—It is the sense of the Congress that—

(1) since its establishment the National Aeronautics and Space Administration has played an im-

portant role in stimulating excellence in the advancement of physical science and engineering disciplines and in providing opportunities and incentives for the pursuit of academinc studies in science, technology, engineering, and mathematics;

(2) a balanced science program as authorized by section 101(d) of the National Aeronautics and Space Administration Act 2005 (P.L. 109–155) contributes significantly to innovation in and the economic competitiveness of the United States; and

(3) a robust National Aeronautics and Space Administration, funded at the levels authorized under sections 202 and 203 of that Act would offer a fair balance among science, aeronautics, exploration, and human space flight programs, all of which can attract and employ scientists, engineers, and technicians across a broad range of fields in science, technology, mathematics, and engineering.

(b) PARTICIPATION IN INNOVATION AND COMPETITIVENESS PROGRAMS.—The Administrator shall fully participate in any interagency efforts to promote innovation and economic competitiveness through scientific research and development.

**SEC. 402. AERONAUTICS INSTITUTE FOR RESEARCH.**

(a) ESTABLISHMENT.—The Administrator of the National Aeronautics and Space Administration shall establish within the Administration an Aeronautics Institute for Research to manage the Aeronautics research of the Administration. The Institute shall be headed by a director with appropriate experience in aeronautics research and development.

(b) DUTIES.—The Institute shall implement the programs authorized under Title IV of the National Aeronautics and Space Administration Authorization Act of 2005 (P.L. 109–155).

(c) COOPERATION WITH OTHER AGENCIES.—The Institute shall operate in conjunction with relevant programs in the Department of Transportation, the Department of Defense, the Department of Commerce, and the Department of Homeland Security, including the activities of the Joint Planning and Development Office established under the VISION 100—Century of Aviation Reauthorization Act (P.L. 108–176). The Director of the Institute may accept assistance, staff, and funding from those Departments and other Federal agencies. Such funding shall be in addition to funds authorized for aeronautics under the National Aeronautics and Space Administration Authorization Act of 2005 (P.L. 109–155). The Director of the Institute may utilize the Next Generation Air Transpor-

tation Senior Policy Committee established under section 710 of under the VISION 100—Century of Aviation Reauthorization Act (P.L. 108–176) to coordinate its programs with other Departments and agencies.

(d) PARTNERSHIPS.—In developing and carrying out its plans, the Institute shall consult with the public and ensure the participation of experts from the private sector including representatives of commercial aviation, general aviation, aviation labor groups, aviation research and development entities, aircraft and air traffic control suppliers, and the space industry.

**SEC. 403. BASIC RESEARCH ENHANCEMENT.**

(a) IN GENERAL.—The Administrator of the National Aeronautics and Space Administration, the Director of the National Science Foundation, the Secretary of Energy, the Secretary of Defense, and Secretary of Commerce shall, to the extent practicable, coordinate basic and fundamental research activities related to physical sciences, technology, engineering and mathematics.

(b) ESTABLISHMENT OF BASIC RESEARCH EXECUTIVE COUNCIL.—In order to ensure effective application of resources to basic science activity and to facilitate cooperative basic and fundamental research activities with other governmental organizations, the Administrator of the National Aeronautics and Space Administration shall

establish within the Administration a Basic Research Executive Council to oversee the distribution and management of programs and resources engaged in support of basic research activity.

(c) MEMBERSHIP.—The membership of the Basic Research Executive Council shall consist of the most senior agency official representing each of the following areas of research:

(1) Space Science.

(2) Earth Science.

(3) Life and Microgravity Sciences.

(4) Aeronautical Research.

(d) LEADERSHIP.—The Council shall be chaired by an individual appointed for that purpose who shall have, as a minimum, a appropriate graduate degree in a recognizable discipline in the physical sciences, and appropriate experience in the conduct and management of basic research activity. The Chairman of the Council shall report directly to the Administrator of the National Aeronautics and Space Administration.

(e) SUPPORTING RESOURCES AND PERSONNEL.—The Chairman of the Council shall be provided with adequate administrative staff support to conduct the activity and functions of the Council.

(f) DUTIES.—The Basic Research Executive Council shall have, at minimum, the following duties:

(1) To establish criteria for the identification of research activity as basic in nature.

(2) To establish, in consultation with the Office of Science and Technology Policy, the National Science Foundation, the National Academy of Sciences, the National Institutes of Health, and other appropriate external organizations, a prioritization of fundamental research activity to be conducted by the National Aeronautics and Space Administration, to be reviewed and updated on an annual basis, taking into consideration evolving national research priorities.

(3) To monitor, review, and evaluate all basic research activity of the National Aeronautics and Space Administration for compliance with basic research priorities established under paragraph (2).

(4) To make recommendations to the Administrator regarding adjustments in the basic research activities of the Administration to ensure consistency with the research priorities established under this section.

(5) To provide an annual report to the Senate Committee on Commerce, Science, and Transpor-

tation and the House of Representatives Committee on Science outlining the activities of the Council during the preceding year and the status of basic research activity within the Administration. The initial such report, to serve as a baseline document, shall be provided within 90 days after the establishment and initial operations of the Council.

# TITLE V—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

**SEC. 501. AUTHORIZATION OF APPROPRIATIONS.**

There are authorized to be appropriated to the Secretary of Commerce for the use of the National Institute of Standards and Technology—

(1) for fiscal year 2007, $639,646,000, of which $106,000,000 shall be used for the Hollings Manufacturing Extension Partnership Program;

(2) for fiscal year 2008, $703,611,000, of which $106,000,000 shall be used for the Hollings Manufacturing Extension Partnership Program;

(3) for fiscal year 2009, $773,972,000, of which $106,000,000 shall be used for the Hollings Manufacturing Extension Partnership Program;

(4) for fiscal year 2010, $851,369,000, of which $106,000,000 shall be used for the Hollings Manufacturing Extension Partnership Program; and

(5) for fiscal year 2011, $936,506,000, of which $106,000,000 shall be used for the Hollings Manufacturing Extension Partnership Program.

**SEC. 502. AMENDMENTS TO THE STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980.**

(a) IN GENERAL.—Section 5 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3704) is repealed.

(b) CONFORMING AMENDMENTS.—

(1) Section 5314 of title 5, United States Code, is amended by striking ''Under Secretary of Commerce for Technology''.

(2) Section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703) is amended—

(A) by striking paragraphs (1) and (3); and

(B) by redesignating paragraphs (2) through (13) as paragraphs (1) through (11), respectively.

(3) Section 21(a) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3713(a)) is amended—

(A) by striking out ''sections 5, 11(g), and 16'' in paragraph (1) and inserting ''sections 11(g) and 16'';

(B) by striking ''$500,000 is authorized only for the purpose of carrying out the requirements of the Japanese technical literature program established under section 5(d) of this Act;''.

(4) Section 208 of the High-Performance Computing Act of 1991 (15 U.S.C. 5528 is amended by striking subsection (c) and redesignating subsection (d) as subsection (c).

(5) Section 6(b)(4)(B)(v) of the Assistive Technology Act of 1998 (29 U.S.C. 3005(b)(4)(B)(v)) is amended by striking ''the Technology Administration of the Department of Commerce,'' and inserting ''the National Institute of Standards and Technology,''.

**SEC. 503. INNOVATION ACCELERATION.**

(a) GRANT PROGRAM.—In order to implement section 202 of this Act, the Director of the National Institute of Standards and Technology shall—

(1) establish a program linked to the measurement laboratories, to be known as the ''Standards and Technology Acceleration Research Program'', to support and promote innovation in the United States through high-risk, high-reward research; and

(2) set aside not less than 8 percent of the funds available to the Institute each fiscal year for the program.

(b) EXTERNAL FUNDING.—The Director shall ensure that at least 80 percent of the funds available for the program shall be used to award competitive, merit-reviewed grants, cooperative agreements or contracts to public or private entities, including businesses and universities. In selecting these projects, the Director shall ensure that all projects have scientific and technical merit and that any resulting intellectual property shall vest in a company or companies incorporated in the United States. Each external project shall involve at least one small or medium-sized business and the Director shall give priority to joint ventures between small or medium-sized businesses and educational institutions. Any grant shall be for a period not to exceed 3 years.

(c) COMPETITIONS.—The Director shall solicit proposals annually to address areas of national need for high-risk, high-reward research, as identified by the Director.

(d) ANNUAL REPORT.—Each year the Director shall issue an annual report describing the program's activities, including include a description of the metrics upon which grant funding decisions were made in the previous fiscal year, any proposed changes to those metrics, metrics for evaluating the success of ongoing and completed grants, and an evaluation of ongoing and completed grants. The first annual report shall include best practices for management of programs to stimulate high-risk, high-reward research.

(e) ADMINISTRATIVE EXPENSES.—No more than 5 percent of the finding available to the program may be used for administrative expenses.

(f) HIGH-RISK, HIGH-REWARD RESEARCH DEFINED.—In this section, the term ''high-risk, high-reward research'' means research that—

(1) has the potential for yielding results with far-ranging or wide-ranging implications; and

(2) addresses critical national needs related to measurement standards and technology; but

(3) is too novel or spans too diverse a range of disciplines to fare well in the traditional peer review process.

**SEC. 504. DEVELOPMENT OF ADVANCED MANUFACTURING SYSTEMS.**

(a) RESEARCH AND DEVELOPMENT.—The Director of the National Institute of Standards and Technology shall support research and development in collaboration with entities and organizations from the industrial sector to supplement and support work in the private sector on advanced manufacturing systems designed to increase productivity and efficiency and to create competitive advantages for United States businesses. These research and development activities should focus on the following activities:

(1) Supporting industry efforts to develop innovative, state-of-the-art manufacturing processes, advanced technologies through interoperable standards, and related concepts, including—

(A) advanced distributed and desktop manufacturing linked to and made compatible with the extended production enterprise system described in paragraph (2);

(B) non-contact quality inspection processes linked to and made compatible with the extended production enterprise system;

(C) small lot manufacturing processes that are—

(i) as cost-effective as mass production processes; and

(ii) linked to and compatible with the extended production enterprise system; and

(D) the use of state-of-the-art materials and processes at the nanotechnological level.

(2) Supporting industry efforts to develop an extended production enterprise system that integrates key entities, including entities engaged in product design and development, manufacturing, sourcing, distribution, and user entities, including through the development of—

(A) interoperable software and standards designed to maximize the compatibility of the design, modeling, and manufacturing stages of the manufacturing process; and

(B) supply chain software.

(b) COORDINATION OF ACTIVITIES.—The Director shall coordinate activities under subsection (a) with activities under—

(1) the Small Business Innovation Research Program (as defined in section 2500(11) of title 10, United States Code);

(2) the Small Business Technology Transfer Program (as defined in section 2500(12) of title 10, United States Code); and

(3) the Manufacturing Technology Program established under section 2521 of title 10, United States Code.

(c) TESTING.—The Director shall support the work of entities and organizations from the industrial sector in developing prototypes and testing areas for testing and refining, in actual production conditions, the processes, technologies, and extended production enterprise system described in subsection (a)(2) in order to maximize productivity gains and cost efficiencies.

(d) DEVELOPMENT OF STANDARDS.—The Director, in coordination with entities and organizations from the industrial sector and the Manufacturing Technology Program, shall support standards to be used as manufacturing performance criteria to accelerate the adoption of improvements and innovative processes and protocols developed under subsection (a).

(e) PILOT TEST BEDS OF EXCELLENCE.—

(1) ESTABLISHMENT.—The Director shall, in collaboration with entities and organizations from the industrial sector, support not more than 3 pilot testbeds of excellence in manufacturing fields impor-

tant to advanced technologies developed under subsection (a), such as nanotechnology or fuel cell technology, to be used by the public and private sector. The testbeds of excellence shall focus on production development, particularly the invention, prototyping, and engineering development stages of the manufacturing process.

(2) COMPETITION.—The Director shall conduct a competition to select the pilot testbeds of excellence based on criteria and metrics established by the Secretary prior to the competition.

(3) FUNDING.—The Director may provide the pilot testbeds of excellence selected pursuant to the competition set forth in paragraph (2) with an appropriate level of funding if and only if the following conditions are satisfied:

(A) No more than ⅓ of the funding of each testbed of excellence is provided by the Federal Government.

(B) At least ⅓ of the cost of each testbed of excellence is provided by participants from the private sector.

(C) At least ⅓ of the cost of each testbed of excellence is provided by State or local governments.

(4) REVIEW OF FUNDED TESTBEDS.—Within 3 years of the start of Federal funding for any testbed of excellence pursuant to this section, the Director shall use the metrics established pursuant to paragraph (2) and any additional review metrics that the Director determines appropriate to assess the performance of the federally funded testbeds of excellence. Any testbed of excellence that fails to satisfy any of the performance metrics will be ineligible for additional Federal funding.

(5) SUNSET PROVISION.—Federal funding of any testbed of excellence shall cease 5 years after the date of enactment of this Act.

(f) HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP FOCUS ON INNOVATION.—The Director of the National Institute of Standards and Technology shall ensure that the Hollings Manufacturing Extension Partnership program develops a focus on innovation, including through technology diffusion, supply and distribution chain integration, and the dissemination of the processes, technologies, and extended production enterprise systems developed under this section.

(g) EXTENDED PRODUCTION ENTERPRISE.—In this section the term ''extended production enterprise'' means a system in which key entities in the manufacturing chain,

including entities engaged in product design and development, manufacturing, sourcing, distribution, and user entities, are linked together through information technology and other means to promote efficiency and productivity.

**SEC. 505. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.**

The National Institute of Standards and Technology Act is amended—

(1) by redesignating the first section 32 (15 U.S.C. 271 note) as section 34 and moving it to the end of the Act; and

(2) by inserting before the section moved by paragraph (1) the following new section:

**"SEC. 33. COLLABORATIVE MANUFACTURING RESEARCH PILOT GRANTS.**

''(a) AUTHORITY.—

''(1) ESTABLISHMENT.—The Director shall establish a pilot program of awards to partnerships among participants described in paragraph (2) for the purposes described in paragraph (3). Awards shall be made on a peer-reviewed, competitive basis.

''(2) PARTICIPANTS.—Such partnerships shall include at least—

''(A) 1 manufacturing industry partner; and

''(B) 1 nonindustry partner.

''(3) PURPOSE.—The purpose of the program under this section is to foster cost-shared collaborations among firms, educational institutions, research institutions, State agencies, and nonprofit organizations to encourage the development of innovative, multidisciplinary manufacturing technologies. Partnerships receiving awards under this section shall conduct applied research to develop new manufacturing processes, techniques, or materials that would contribute to improved performance, productivity, and competitiveness of United States manufacturing, and build lasting alliances among collaborators.

''(b) PROGRAM CONTRIBUTION.—Awards under this section shall provide for not more than one-third of the costs of a partnership.

''(c) APPLICATIONS.—Applications for awards under this section shall be submitted in such manner, at such time, and containing such information as the Director shall require. Such applications shall describe at a minimum—

''(1) how each partner will participate in developing and carrying out the research agenda of the partnership;

''(2) the research that the grant would fund; and

''(3) how the research to be funded with the award would contribute to improved performance, productivity, and competitiveness of the United States manufacturing industry.

''(d) SELECTION CRITERIA.—In selecting applications for awards under this section, the Director shall consider at a minimum—

''(1) the degree to which projects will have a broad impact on manufacturing;

''(2) the novelty and scientific and technical merit of the proposed projects; and

''(3) the demonstrated capabilities of the applicants to successfully carry out the proposed research.

''(e) DISTRIBUTION.—In selecting applications under this section the Director shall ensure, to the extent practicable, a distribution of overall awards among a variety of manufacturing industry sectors and a range of firm sizes.

''(f) DURATION.—In carrying out this section, the Director shall run a single pilot competition to solicit and make awards. Each award shall be for a 3-year period.''.

**SEC. 506. MANUFACTURING EXTENSION.**

(a) MANUFACTURING CENTER EVALUATION.—Section 25(c)(5) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(c)(5)) is amended by inserting ''A Center that has not received a positive evaluation by the evaluation panel shall be notified by the panel of the deficiencies in its performance and shall be placed on probation for one year, after which time the panel shall reevaluate the Center. If the Center has not addressed the deficiencies identified by the panel, or shown a significant improvement in its performance, the Director shall conduct a new competition to select an operator for the Center or may close the Center.'' after ''at declining levels.''.

(b) FEDERAL SHARE.—Strike section 25(d) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(d)) and insert the following:

''(d) ACCEPTANCE OF FUNDS.—In addition to such sums as may be appropriated to the Secretary and Director to operate the Centers program, the Secretary and Director also may accept funds from other Federal departments and agencies and under section 2(c)(7) from the private sector for the purpose of strengthening United States manufacturing. Such funds from the private sector, if allocated to a Center or Centers, shall not be considered in the calculation of the Federal share of capital and an-

nual operating and maintenance costs under subsection (c).''.

(c) HOLLINGS MANUFACTURING EXTENSION CENTER COMPETITIVE GRANT PROGRAM.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) is amended by adding at the end the following new subsections:

''(e) COMPETITIVE GRANT PROGRAM.—

''(1) ESTABLISHMENT.—The Director shall establish, within the Hollings Manufacturing Extension Partnership program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

''(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

''(3) PURPOSE.—The purpose of the program under this subsection is to develop projects to solve new or emerging manufacturing problems as determined by the Director, in consultation with the Director of the Hollings Manufacturing Extension Partnership program, the Hollings Manufacturing Extension Partnership National Advisory Board, and small and medium-sized manufacturers. One or

more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, or extend beyond these traditional areas.

''(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Hollings Manufacturing Extension Partnership National Advisory Board.

''(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively awarded. The Director shall select proposals to receive awards—

''(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

''(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

''(C) that will contribute to the long-term economic stability of that region.

''(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection may be required to provide a matching contribution.

''(f) AUDITS.—A center that receives assistance under this section shall submit annual audits to the Secretary in accordance with Office of Management and Budget Circular A-133 and shall make such audits available to the public on request.''.

(d) PROGRAMMATIC AND OPERATIONAL PLAN.—Not later than 120 days after the date of enactment of this Act, the Director of the National Institute of Standards and Technology shall transmit to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a 3-year programmatic and operational plan for the Hollings Manufacturing Extension Partnership program under sections 25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l). The plan shall include comments on the plan from the Hollings Manufacturing Extension Partnership State partners and the Hollings Manufacturing Extension Partnership National Advisory Board.

**SEC. 507. EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE TECHNOLOGY.**

(a) IN GENERAL.—The Director of the National Institutes of Standards and Technology shall re-establish the Experimental Program to Stimulate Competitive Technology. The purpose of the program shall be to strengthen the technological competitiveness of those States that have historically received less Federal research and development funds than a majority of the States have received.

(b) ARRANGEMENTS.—In carrying out the program, the Director shall cooperate with State, regional, or local science and technology-based economic development organization and with representatives of small business firms and other appropriate technology-based businesses.

(c) GRANTS AND COOPERATIVE AGREEMENTS.—In carrying out the program, the Director may make grants or enter into cooperative agreements to provide for—

(1) technology research and development;

(2) technology transfer from university research;

(3) technology deployment and diffusion; and

(4) the strengthening of technological and innovation capabilities through consortia comprised of—

(A) technology-based small business firms;

(B) industries and emerging companies;

(C) institutions of higher education including community colleges; and

(D) State and local development agencies and entities.

(d) REQUIREMENTS FOR MAKING AWARDS.—

(1) IN GENERAL.—In making awards under this section, the Director shall ensure that the awards are awarded on a competitive basis that includes a review of the merits of the activities that are the subject of the award, giving special emphasis to those projects which will increase the participation of women and underrepresented groups in science and technology.

(2) MATCHING REQUIREMENT.—The non-Federal share of the activities (other than planning activities) carried out under an award under this subsection shall be not less than 50 percent of the cost of those activities.

(e) CRITERIA FOR STATES.—The Director shall establish criteria for achievement by each State that participates in the program. Upon the achievement of all such criteria, a State shall cease to be eligible to participate in the program.

(f) COORDINATION.—To the extent practicable, in carrying out this subsection, the Director shall coordinate

the program with other programs of the Department of Commerce.

(g) REPORT.—

(1) IN GENERAL.—Not later than 90 days after the enactment of this act, the Director shall prepare and submit a report that meets the requirements of this paragraph to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science.

(2) REQUIREMENTS FOR REPORT.—The report prepared under this paragraph shall contain—

(A) a description of the structure and procedures of the program;

(B) a management plan for the program;

(C) a description of the merit-based review process to be used in the program;

(D) milestones for the evaluation of activities to be assisted under the program in fiscal year 2008;

(E) an assessment of the eligibility of each State that participates in the Experimental Program to Stimulate Competitive Research of the National Science Foundation to participate in the program under this subsection; and

(F) the evaluation criteria with respect to which the overall management and effectiveness of the program will be evaluated.

**SEC. 508. TECHNICAL AMENDMENTS TO THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT AND OTHER TECHNICAL AMENDMENTS.**

(a) RESEARCH FELLOWSHIPS.—Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g-1) is amended by striking ''up to 1 per centum of the'' in the first sentence.

(b) FINANCIAL AGREEMENTS.—

(1) CLARIFICATION.—Section 2(b)(4) of the National Institute of Standards and Technology Act (15 U.S.C. 272(b)(4)) is amended by inserting ''and grants and cooperative agreements,'' after ''arrangements,''.

(2) MEMBERSHIPS.—Section 2(c) of the National Institute of Standards and Technology Act (15 U.S.C. 272(c)) is amended—

(A) by striking ''and'' after the semicolon in paragraph (21);

(B) by redesignating paragraph (22) as paragraph (23); and

(C) by inserting after paragraph (21) the following:

''(22) notwithstanding subsection (b)(4) of this section, the Grants and Cooperative Agreements Act (31 U.S.C. 6301-6308), the Competition in Contracting Act (31 U.S.C. 3551-3556), and the Federal Acquisition Regulations set forth in title 48, Code of Federal Regulations, to expend appropriated funds for National Institute of Standards and Technology memberships in scientific organizations, registration fees for attendance at conferences, and sponsorship of conferences in furtherance of technology transfer; and''.

(c) WORKING CAPITAL FUND.—Section 12 of the National Institute of Standards and Development Act (15 U.S.C. 278b) is amended by adding at the end the following:

''(g) AMOUNT AND SOURCE OF TRANSFERS.—Not to exceed one-quarter per centum of the amounts appropriated to the Institute for any fiscal year may be transferred to the fund, in addition to any other transfer authority. In addition, funds provided to the Institute from other Federal agencies for the purpose of production of Standard Reference Materials may be transferred to the fund.''.

(d) OUTDATED SPECIFICATIONS.—

(1) REDEFINITION OF METRIC SYSTEM.—The Metric System Act of 1866 (15 U.S.C. 205; 14 Stat. 339, 340) is amended by striking the text of section 2 and inserting the following:

''The metric system of measurement shall be defined as the International System of Units as established in 1960, and subsequently maintained, by the General Conference of Weights and Measures, and as interpreted or modified for the United States by the Secretary of Commerce.''.

(2) REPEAL OF REDUNDANT AND OBSOLETE AUTHORITY.—The Act of July 21, 1950, entitled, ''An Act To redefine the units and establish the standards of electrical and photometric measurements of 1950'' (15 U.S.C. 223, 224) is hereby repealed.

(3) STANDARD TIME.—The first section of the Act of March 19, 1918, (15 U.S.C 261; commonly known as the Calder Act) is amended—

(A) by inserting ''(a) IN GENERAL.—'' before ''For the purpose'';

(B) by striking the second sentence and the extra period after it and inserting ''Except as provided in section 3(a) of the Uniform Time Act of 1966, the standard time of the first zone

shall be Coordinated Universal Time retarded by 4 hours; that of the second zone retarded by 5 hours; that of the third zone retarded by 6 hours; that of the fourth zone retarded by 7 hours; that of the fifth zone retarded 8 hours; that of the sixth zone retarded by 9 hours; that of the seventh zone retarded by 10 hours; that of the eighth zone retarded by 11 hours; and that of the ninth zone shall be Coordinated Universal Time advanced by 10 hours.''; and

(C) adding at the end the following:

''(b) COORDINATED UNIVERSAL TIME DEFINED.—In this section, the term 'Coordinated Universal Time' means the time scale maintained through the General Conference of Weights and Measures and interpreted or modified for the United States by the Secretary of Commerce.'.

(e) RETENTION OF DEPRECIATION SURCHARGE.—Section 14 of the National Institute of Standards and Technology Act (15 U.S.C. 278d) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''Within''; and

(2) adding at the end the following:

''(b) RETENTION OF FEES.—The Director is authorized to retain all building use and depreciation surcharge fees collected pursuant to OMB Circular A-25. Such fees

shall be collected and credited to the Construction of Research Facilities Appropriation Account for use in maintenance and repair of National Institute of Standards and Technology's existing facilities.''.

(f) NON-ENERGY INVENTIONS PROGRAM.—Section 28 of the National Institute of Standards and Technology Act, as redesignated by section 202 of this Act (formerly 15 U.S.C. 278m), is repealed.

○